WHAT IS CLAIMED IS:

1.   A head arm assembly comprising:

a head slider having at least one head element;

an arm member for supporting the head slider at one end section;

an actuator, mounted to the other end section of the arm member, for rotationally moving the arm member in a direction substantially parallel with a recording medium surface around a horizontal rotation axis of the arm member; and

a load generation means for generating a load for energizing said head slider in a direction to the recording medium surface by rotationally moving said arm member in a direction substantially orthogonal to said recording medium surface around a vertical rotation axis,

the position of the center of gravity of the head arm assembly being located at a different position from said vertical rotation axis on a center axis of said arm member.

2.   The head arm assembly as claimed in claim 1, wherein a force applied to said head slider by a rotational moment occurring due to an applied impact acceleration and a displacement of said position of the center of gravity is set to be not more than negative pressure or positive pressure occurring to an air bearing surface of said head slider due to

22

rotation of said recording medium.

3.   The head arm assembly as claimed in claim 1, wherein said position of the center of gravity is located at a position between said actuator and said vertical rotation axis.

4.   The head arm assembly as claimed in claim 3, wherein said position of the center of gravity is a position which substantially satisfies $L_2 = M_1 \times L_1/M_2$, where M_1 is a mass at a load point to said head slider, M_2 is a mass at said position of the center of gravity, L_1 is a distance between a load point to said head slider and said vertical rotation axis, L_2 is a distance between said vertical rotation axis and said position of the center of gravity.

5.   The head arm assembly as claimed in claim 3, wherein when said position of the center of gravity is at a position which substantially satisfies $L_2 > M_1 \times L_1/M_2$, where M_1 is a mass at a load point to said head slider, M_2 is a mass at said position of the center of gravity, L_1 is a distance between a load point to said head slider and said vertical rotation axis, L_2 is a distance between said vertical rotation axis and said position of the center of gravity, an air bearing surface of said head slider is set so that positive pressure occurring to the air bearing surface due to rotation of said recording

medium is not less than a product of an inertial force obtained from a mass of a part from said position of center of gravity of the head arm assembly to said head slider and an applied impact acceleration.

6.   The head arm assembly as claimed in claim 3, wherein when said position of the center of gravity is at a position which substantially satisfies $L_2 < M_1 \times L_1/M_2$, where M_1 is a mass at a load point to said head slider, M_2 is a mass at said position of the center of gravity, L_1 is a distance between a load point to said head slider and said vertical rotation axis, L_2 is a distance between said vertical rotation axis and said position of the center of gravity, an air bearing surface of said head slider is set so that negative pressure occurring to the air bearing surface due to rotation of said recording medium is not less than a product of an inertial force obtained from a mass of a part from said position of center of gravity of the head arm assembly to said head slider and an applied impact acceleration.

7.   The head arm assembly as claimed in claim 1, wherein said position of the center of gravity is located at a position between said head slider and said vertical rotation axis.

8.   The head arm assembly as claimed in claim 7, wherein when said position of the center of gravity is at a position which substantially satisfies $L_2 < M_1 \times L_1/M_2$, where M_1 is a mass at a load point to said head slider, M_2 is a mass at said position of the center of gravity, L_1 is a distance between a load point to said head slider and said vertical rotation axis, L_2 is a distance between said vertical rotation axis and said position of the center of gravity, an air bearing surface of said head slider is set so that negative pressure occurring to the air bearing surface due to rotation of said recording medium is not less than a product of an inertial force obtained from a mass of a part from said position of center of gravity of the head arm assembly to said head slider and an applied impact acceleration.

9.   The head arm assembly as claimed in claim 1, wherein said horizontal rotation axis is provided at a horizontal bearing part located at a midpoint of said arm member, and said vertical rotation axis comprises a protuberance provided in the vicinity of the horizontal bearing part.

10.   The head arm assembly as claimed in claim 9, wherein said load generation means comprises a leaf spring connected to said horizontal bearing part and to said arm member.

11.   The head arm assembly as claimed in claim 1, wherein said arm member comprises a support arm having rigidity, and a flexure having elasticity, which is supported at one end section of the support arm and for controlling a flying attitude of said head slider, and the head slider is fixed on the flexure.

12.   The head arm assembly as claimed in claim 11, wherein said arm member further comprises a load beam having rigidity and including a load protrusion for applying load to said head slider, said flexure being fixed on the load beam.

13.   A disk drive device including at least one head arm assembly that comprises:

a head slider having at least one head element;

an arm member for supporting the head slider at one end section;

an actuator, mounted to the other end section of the arm member, for rotationally moving the arm member in a direction substantially parallel with a recording medium surface around a horizontal rotation axis of the arm member; and

a load generation means for generating a load for energizing said head slider in a direction to the recording medium surface by rotationally moving said arm member in a

direction substantially orthogonal to said recording medium surface around a vertical rotation axis,

the position of the center of gravity of the head arm assembly being located at a different position from said vertical rotation axis on a center axis of said arm member.

14.   The disk drive device as claimed in claim 13, wherein a force applied to said head slider by a rotational moment occurring due to an applied impact acceleration and a displacement of said position of the center of gravity is set to be not more than negative pressure or positive pressure occurring to an air bearing surface of said head slider due to rotation of said recording medium.

15.   The disk drive device as claimed in claim 13, wherein said position of the center of gravity is located at a position between said actuator and said vertical rotation axis.

16.   The disk drive device as claimed in claim 15, wherein said position of the center of gravity is a position which substantially satisfies $L_2 = M_1 \times L_1/M_2$, where M_1 is a mass at a load point to said head slider, M_2 is a mass at said position of the center of gravity, L_1 is a distance between a load point to said head slider and said vertical rotation axis, L_2 is a distance between said vertical rotation axis and said

position of the center of gravity.

17.   The disk drive device as claimed in claim 15, wherein when said position of the center of gravity is at a position which substantially satisfies $L_2 > M_1 \times L_1/M_2$, where M_1 is a mass at a load point to said head slider, M_2 is a mass at said position of the center of gravity, L_1 is a distance between a load point to said head slider and said vertical rotation axis, L_2 is a distance between said vertical rotation axis and said position of the center of gravity, an air bearing surface of said head slider is set so that positive pressure occurring to the air bearing surface due to rotation of said recording medium is not less than a product of an inertial force obtained from a mass of a part from said position of center of gravity of the head arm assembly to said head slider and an applied impact acceleration.

18.   The disk drive device as claimed in claim 15, wherein when said position of the center of gravity is at a position which substantially satisfies $L_2 < M_1 \times L_1/M_2$, where M_1 is a mass at a load point to said head slider, M_2 is a mass at said position of the center of gravity, L_1 is a distance between a load point to said head slider and said vertical rotation axis, L_2 is a distance between said vertical rotation axis and said position of the center of gravity, an air bearing surface of

28

said head slider is set so that negative pressure occurring to
the air bearing surface due to rotation of said recording
medium is not less than a product of an inertial force
obtained from a mass of a part from said position of center of
gravity of the head arm assembly to said head slider and an
applied impact acceleration.

19.   The disk drive device as claimed in claim 13, wherein
said position of the center of gravity is located at a
position between said head slider and said vertical rotation
axis.

20.   The disk drive device as claimed in claim 19, wherein
when said position of the center of gravity is at a position
which substantially satisfies $L_2 < M_1 \times L_1/M_2$, where M_1 is a
mass at a load point to said head slider, M_2 is a mass at said
position of the center of gravity, L_1 is a distance between a
load point to said head slider and said vertical rotation axis,
L_2 is a distance between said vertical rotation axis and said
position of the center of gravity, an air bearing surface of
said head slider is set so that negative pressure occurring to
the air bearing surface due to rotation of said recording
medium is not less than a product of an inertial force
obtained from a mass of a part from said position of center of
gravity of the head arm assembly to said head slider and an

applied impact acceleration.

21.   The disk drive device as claimed in claim 13, wherein said horizontal rotation axis is provided at a horizontal bearing part located at a midpoint of said arm member, and said vertical rotation axis comprises a protuberance provided in the vicinity of the horizontal bearing part.

22.   The disk drive device as claimed in claim 21, wherein said load generation means comprises a leaf spring connected to said horizontal bearing part and to said arm member.

23.   The disk drive device as claimed in claim 13, wherein said arm member comprises a support arm having rigidity, and a flexure having elasticity, which is supported at one end section of the support arm and for controlling a flying attitude of said head slider, and the head slider is fixed on the flexure.

24.   The disk drive device as claimed in claim 23, wherein said arm member further comprises a load beam having rigidity and including a load protrusion for applying load to said head slider, said flexure being fixed on the load beam.